3. (Amended) The method according to claim 2, wherein the doping with the n-type material is effected by an InP compound.

4. (Amended) The method according to claim 1, further including forming a Distributed Bragg Reflector (DBR) as part of the at least one reflecting surface.

~~5. The method according to claim 1, further comprising the step of forming a tunnel junction between an apertured active region and the at least one of the reflecting surfaces.~~

6. (Amended) The method according to claim 5, further including having an alloy of InAlGaAs, in the active region, substantially lattice matched to InP.

7. (Amended) The method according to claim 5, further including having an alloy of InGaAsP, in the active region, substantially lattice matched to InP.

8. (Amended) The method according to claim 5, further including an alloy of InGaAs, in the active region, substantially lattice matched to InP.

9. (Amended) The method according to claim 4, further including alternating layers of $Al_{a1}Ga_{1-a1}As_bSb_{1-b}$ and $Al_{a2}Ga_{1-a2}As_bSb_{1-b}$ in the DBR.

10. (Amended) The method according to claim 9, further including the step of assigning b greater than about 0.5, a1 greater than about 0.9, and a2 less than about 0.3.

11. (Amended) The method according to claim 4, further including having an undoped DBR.

12. (Amended) The method according to claim 1, further effecting the VCSEL to exhibit continuous wave operation at temperatures greater than about 80 degrees Celsius.

13. (Amended) The method according to claim 5, further including an n-type InP and p-type InAlAs in the tunnel junction.

14. (Amended) The method according to claim 1, further providing a thickness of about 1-3λ to the at least one heat spreading layer.

15. (Amended) The method according to claim 5, further providing a mixture to selectively etch the active region to form an aperture in the VCSEL and simultaneously preclude substantial etching of the at least one heat spreading layer.

A2

16. (Amended) A method for reducing the thermal impedance in a vertical-cavity surface-emitting laser (VCSEL) , the method comprising:

forming a first heat spreading layer between a first reflecting surface and an active layer in a VCSEL;

forming a second heat spreading layer between a second reflecting surface and the active layer in a VCSEL: and

said first and second heat spreading layers reduce the thermal impedance in the VCSEL by allowing an injected current to bypass the reflecting surfaces.

17. (Amended) The method according to claim 16, wherein the forming steps include doping the heat spreading layers with an n-type material.

18. (Amended) The method according to claim 17, including effecting the doping with the n-type material with an InP compound.

19. (Amended) The method according to claim 16, further including forming a Distributed Bragg Reflectors (DBRs) as part of the first and the second reflecting surfaces.

20. The method according to claim 16, further comprising the step of forming a tunnel junction between an apertured active region and the first reflecting surface.

A3

21. (Amended) The method according to claim 20, further including having an alloy of InAlGaAs, in the active region, substantially lattice matched to InP.

22. (Amended) The method according to claim 20, further including having an alloy of InGaAsP, in the active region, substantially lattice matched to InP.

23. (Amended) The method according to claim 20, further including an alloy of InGaAs, in the active region, substantially lattice matched to InP.

24. (Amended) The method according to claim 19, further including alternating layers of $Al_{a1}Ga_{1-a1}As_bSb_{1-b}$ and $Al_{a2}Ga_{1-a2}As_bSb_{1-b}$ in the DBR.

A3

25. (Amended) The method according to claim 24, further including the step of assigning b greater than about 0.5, a1 greater than about 0.9, and a2 less than about 0.3.

26. (Amended) The method according to claim 19, further including having undoped DBRs.

27. (Amended) The method according to claim 16, further effecting the VCSEL to exhibit continuous wave operation at temperatures greater than about 80 degrees Celsius.

28. (Amended) The method according to claim 20, further including an n-type InP and p-type InAlAs in the tunnel junction.

29. (Amended) The method according to claim 16, further providing a thickness of about 1-3λ to each of the heat spreading layers.

30. (Amended) The method according to claim 20, further providing a mixture to selectively etch the active region to form an aperture in the VCSEL and simultaneously preclude substantial etching of each of the heat spreading layers.

31. (Amended) A vertical-cavity surface-emitting laser (VCSEL) operating at a reduced temperature, the VCSEL comprising:

a first and a second reflecting surface in a VCSEL;

an active layer in the VCSEL;

a first and a second heat spreading layer in the VCSEL, said first heat spreading layer being in between the first reflecting surface and the active layer, and the second heat spreading layer being in between the second reflecting surface and the active layer; and

the first and second heat spreading layers allowing heat generated in the VCSEL to bypass the first and second reflecting surfaces, thereby reducing the temperature of the VCSEL.

New Claim A4

32. (Amended) The vertical-cavity surface-emitting laser (VCSEL) according to claim 31, wherein optical reflections at edges of the first and second heat spreading layers add in phase with optical reflections from the first and second reflecting surfaces.